What Is Data Collection?

Data Collection

is

obtaining useful information.

The issue is not: *How do we collect data?*

It is: *How do we obtain useful data*?

Why Collect Data?

To estabish a factual basis
for making decisions

I think the problem is . . .

becomes

The data indicate the problem is .

. .

Making a Data Collection Plan

Why do we want the data?

What purpose will they serve?

Formulate your change statement:

If . . . then . . .

Making a Data Collection Plan

Where will we collect the data?

- Refer to the process Flowchart
- Identify steps where you expect changes
- Take data at those steps and at the end of the process

Making a Data Collection Plan

What type of data will we collec

- **Attribute data:** Presence or absence of a characteristic
- **Variables data:** Specific measurement

Making a Data Collection Plan

Who will collect the data?

Workers who perform the process steps

- Properly trained
- Provided with resources

Making a Data Collection Plan

How do we collect the right data?

- Small sample sizes
- Collect frequently
- Dependent on availability of data, cost, consequences

Data Collection Problems

Failure to establish Operational Definitions

- When and how often to collect data
- How to collect data
- Units of measurement
- Criteria for defects
- Handling of multiple defects

Data Collection Problems

Adding bias to the collection process

- Slowdown or speedup
- Fear
- Errors in procedures
- Missing data

Uses for Checksheets

- Record data for further analysis
- Provide historical record
- Introduce Data Collection methods

Types of Checksheets

Tabular Format

JULY 94

DEFECT	12	13	14	15	16	17	18	TOTAL
WRONG NSN	||	|	||	|	|	|		8
FAULTY MATERIAL	|	||		|		|		5
PMS NOT DONE	||	|||	||	|||	|	|||	||	16
INSTALL PROBLEMS				|		|		2

Types of Checksheets

Location Format

DATE: _____

DEPT: _____

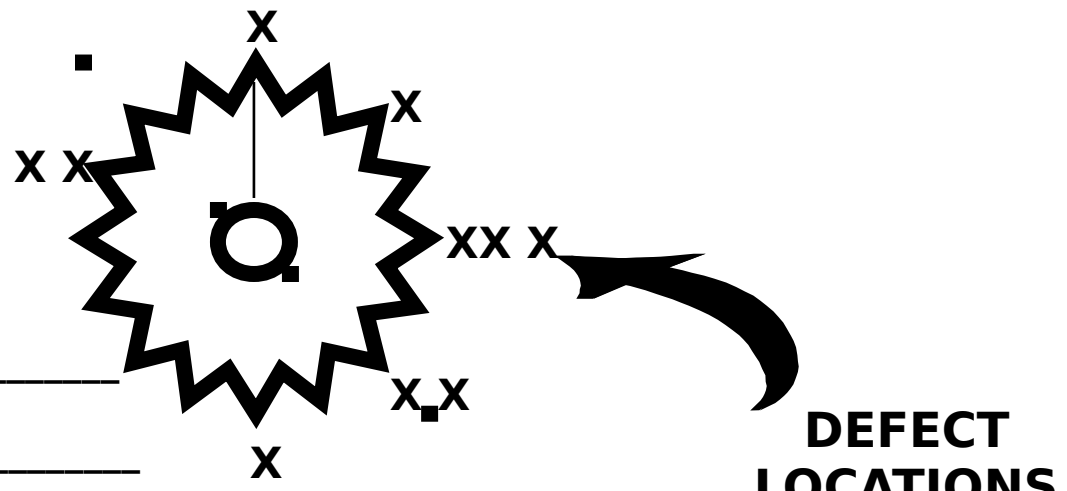
COMMENTS: _____

_____

LOT NUMBER: _____

NUMBER OF BURRS: _____

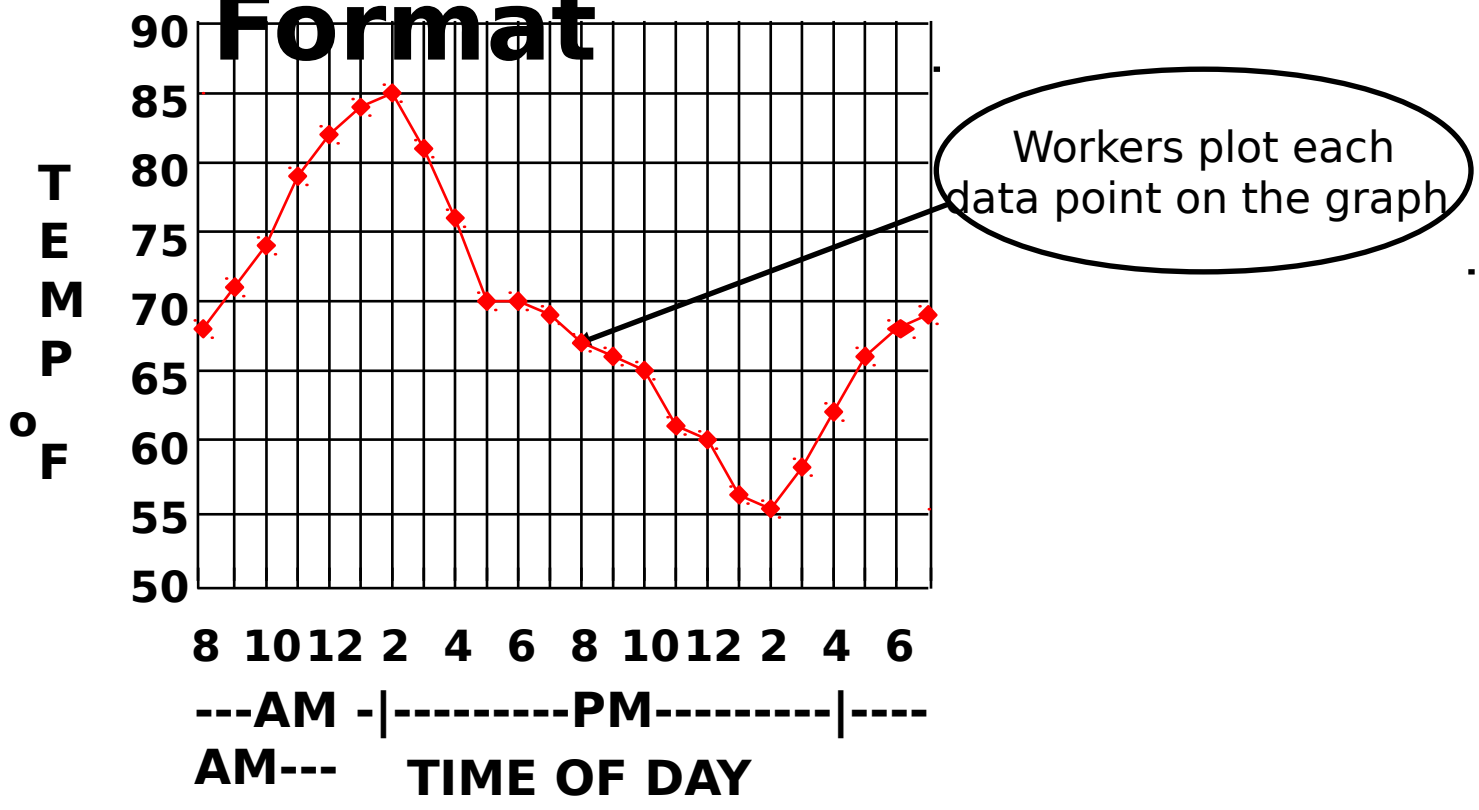
INSPECTOR: _____



Location of burrs on a special gear marked with an **X**.

Types of Checksheets

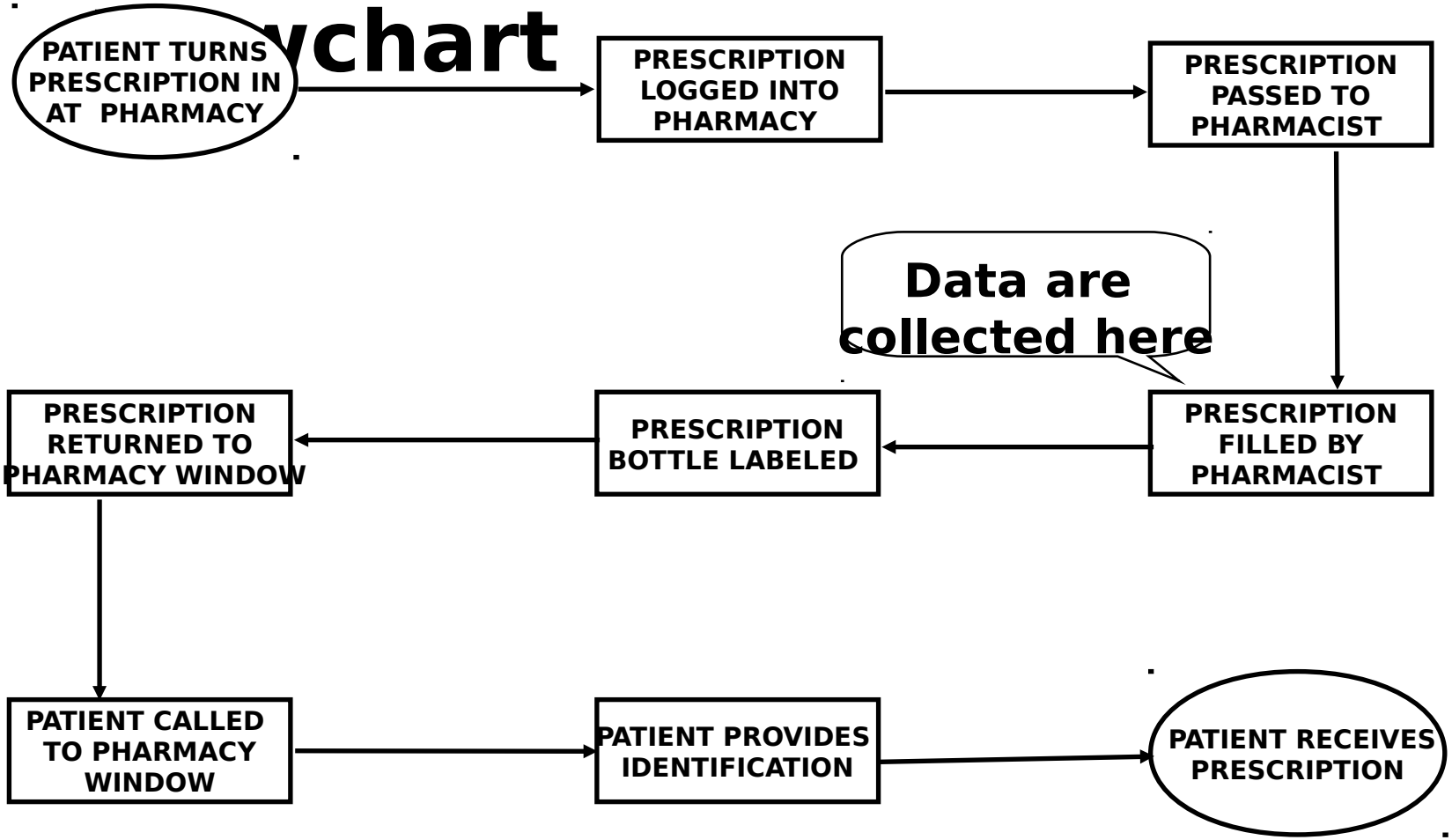
Graphic Format



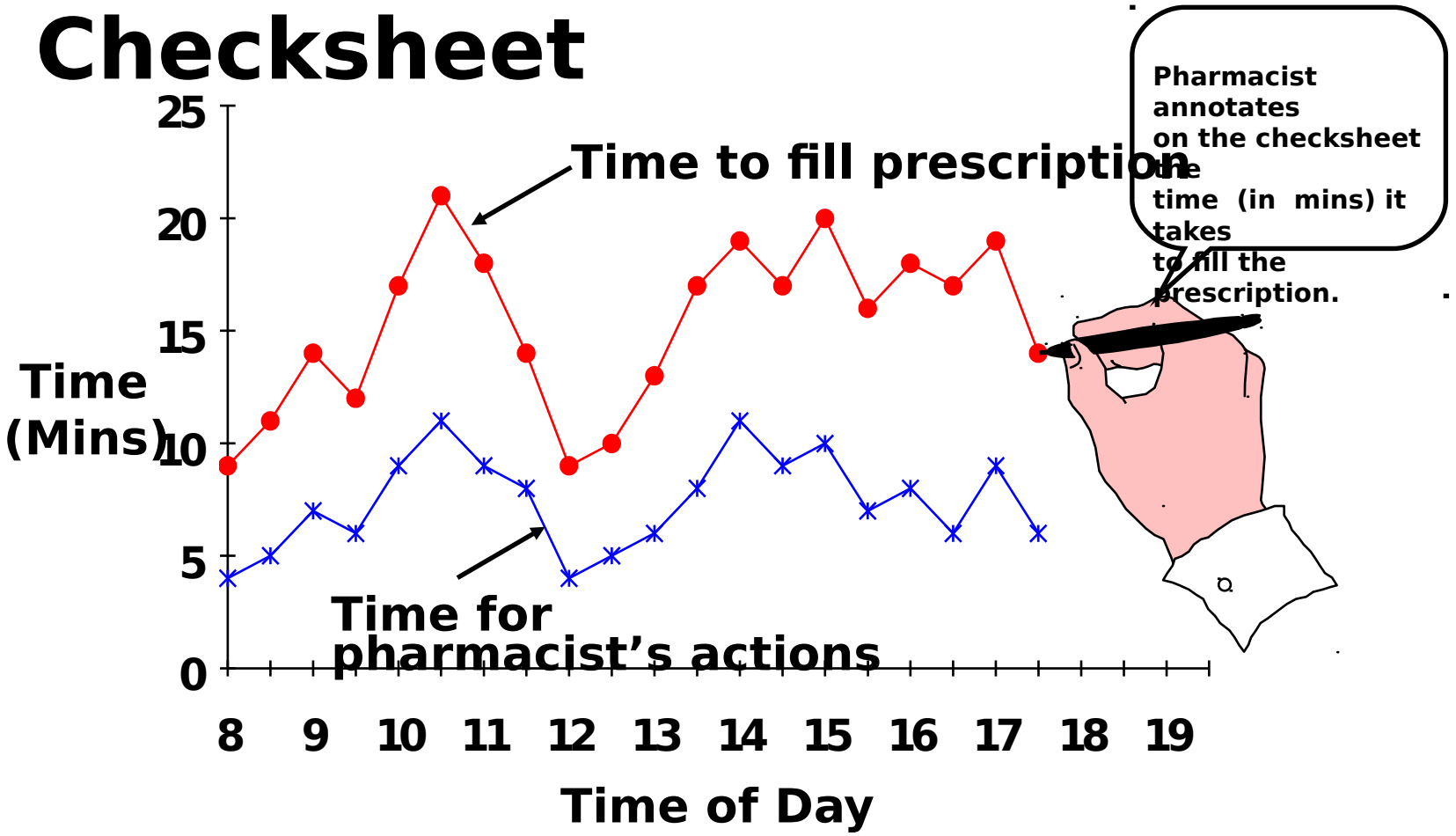
Making a Useful Checksheet

- Tailored for specific purpose
- Workers help develop form
- Columns labeled clearly
- User-friendly format

Pharmacy Example
Flowchart

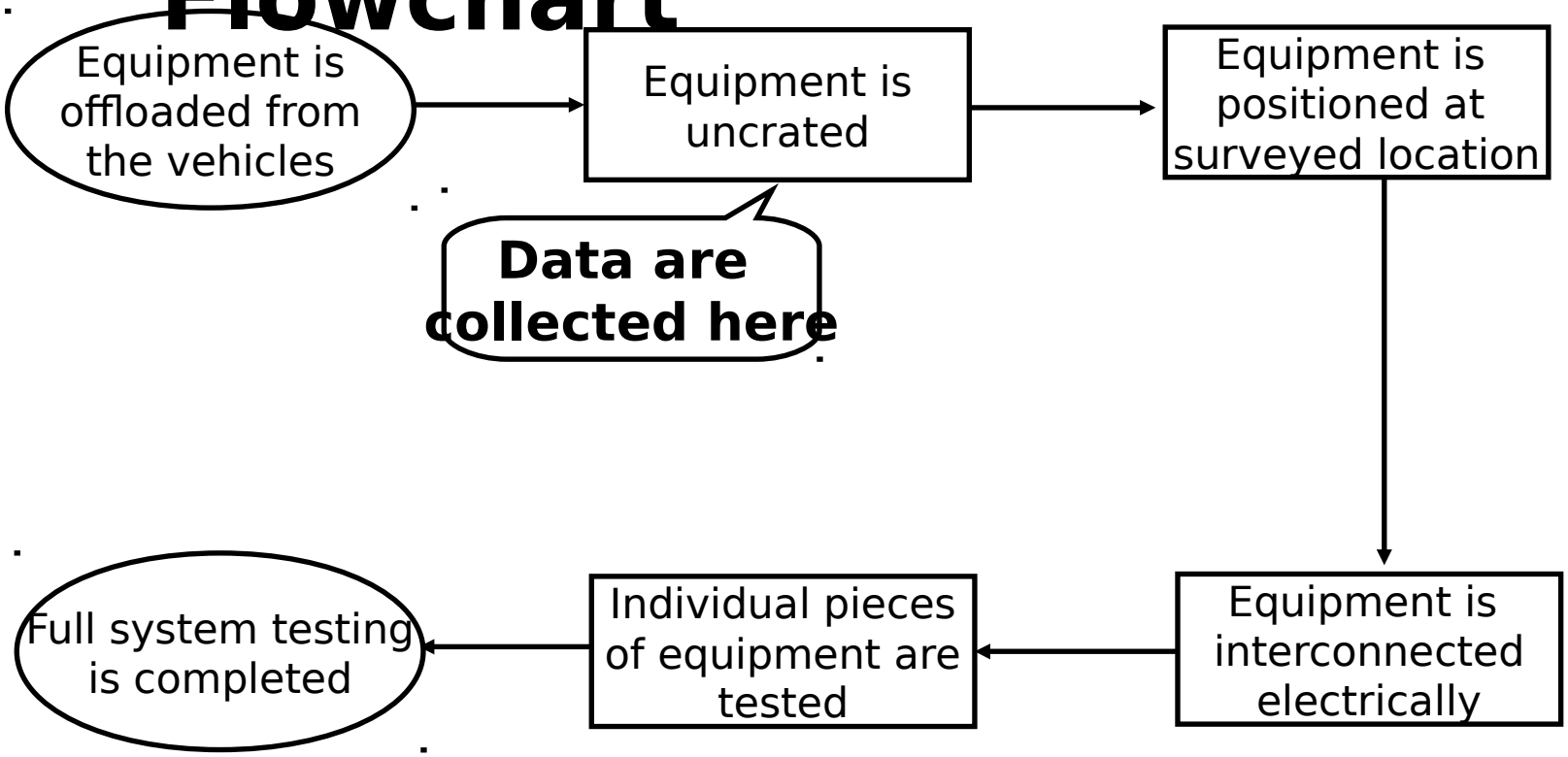


Pharmacy Example Checksheet



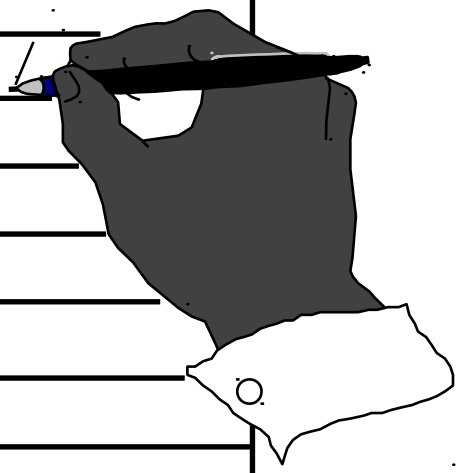
LEGEND: MAKALAPA NAVMEDCLINIC - 16 July 94 - Elapsed time to fill prescription - 1 every 30 mins

Gateway Example Flowchart



Gateway Example

UNCRATING (IN MINS)		TOTAL TIME (IN MINS)	
160-179		0550-0599	
180-199		0600-0649	
200-219		0650-0699	
220-239		0700-0749	
240-259		0750-0799	
260-279		0800-0849	
280-299		0850-0899	
300-319		0900-0949	
320-339		0950-0999	
340-359		1000-1049	
360-379		1050-1099	



LEGEND: Elapsed time (in mins) to uncrate equipment - 19 August 94 - MCBH Kaneohe Bay, Hawaii

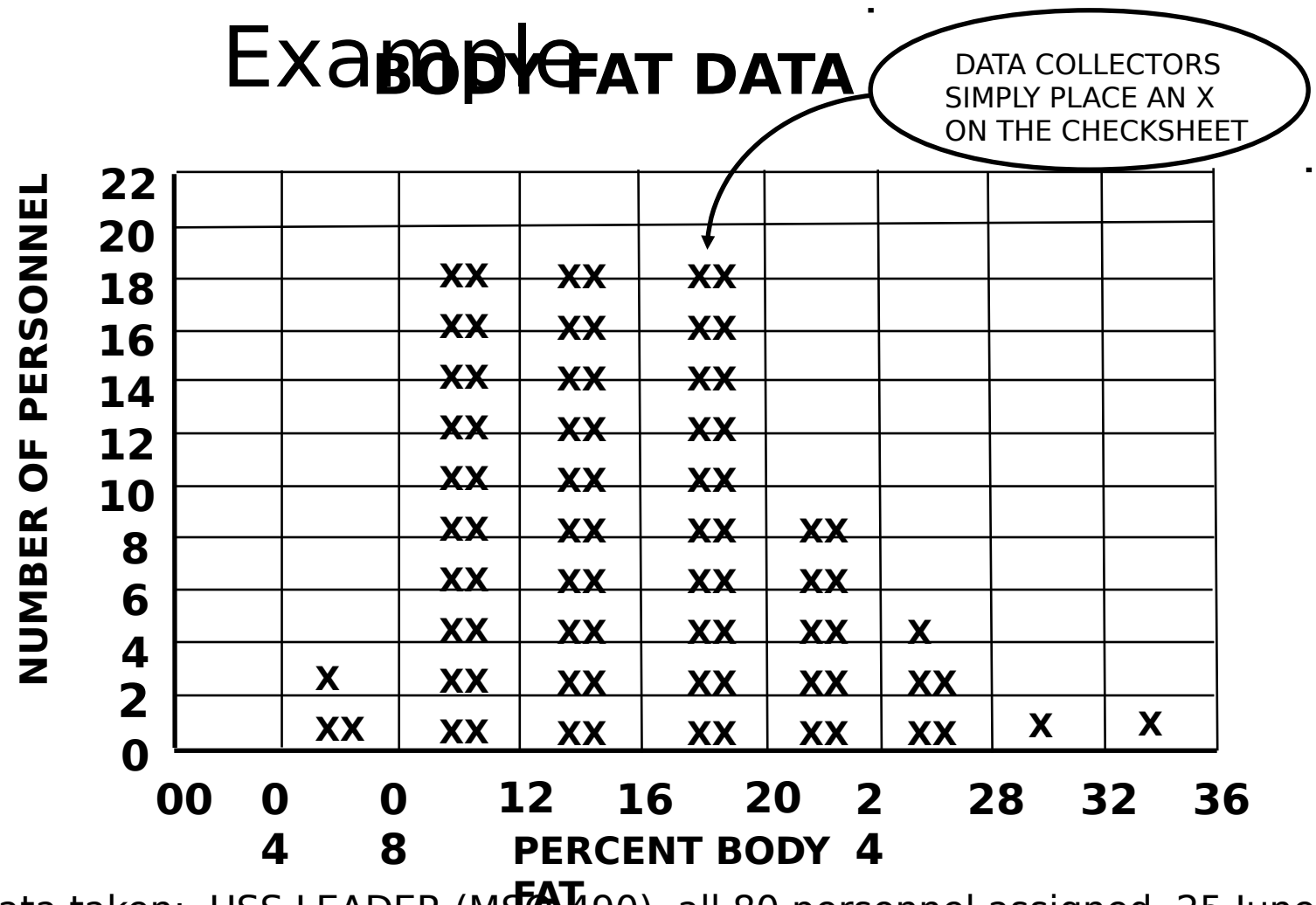
Checksheet Example

MK 38 GUNEX DATA

YARDS FROM THE TARGET	COUNTS
-180 YDS to -120 YDS	𝍸
-120 YDS to -060 YDS	𝍸
-060 YDS to 000 YDS	𝍸 𝍸 𝍸
000 YDS to 060 YDS	𝍸 𝍸 𝍸 𝍸
060 YDS to 120 YDS	𝍸 𝍸 𝍸 𝍸 𝍸
120 YDS to 180 YDS	𝍸 𝍸 𝍸 𝍸 𝍸
180 YDS to 240 YDS	𝍸 𝍸 𝍸 𝍸
240 YDS to 300 YDS	𝍸 𝍸 𝍸
300 YDS to 360 YDS	𝍸 𝍸
360 YDS to 420 YDS	𝍸

Data taken: USS CROMMELIN (FFG-37) at PMRF, 135 RDS BL&P, Mount 31, 25 June 94

Checksheet Example



Data taken: USS LEADER (MSO-490), all 80 personnel assigned, 25 June 94

Checksheet Example

GEAR DEFECT DATA

Defect Category	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	TOTAL
I.D. Size Wrong	I			I	II					I		5
O.D. Size Wrong		I										1
Nicks		II			II	II	II		I	I	II	12
Burrs			I	I	I		I	I	I	I	II	9
Tooth Geometry	I							I				2
Blemishes	I	II		I		I		I			II	8
Other			I									1
Total	3	5	2	3	5	3	3	3	2	3	6	38

Checksheet

Example EQUIPMENT BREAKDOWN DATA

Time OOC	Machine A			Machine B			
	Shift 1	Shift 2	Shift 3	Shift 1	Shift 2	Shift 3	Total
00-30 Mins		M				E	2
30-60 Mins	C			M			2
1 - 1-1/2 Hrs			E	E	H		3
1-1/2 - 2 Hrs		H				M	2
2 - 2-1/2 Hrs			H				1
Total	1	2	2	2	1	2	10

FAULTS: M = Mechanical, E = Electrical, C = Coolant, H = Hydraulic